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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/542,135	07/12/2005	Steven G E Aerts	NL 030052	9781
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NXP, B.V. NXP INTELLECTUAL PROPERTY & LICENSING M/S41-SJ 1109 MCKAY DRIVE SAN JOSE, CA 95131			EXAMINER NEWLIN, TIMOTHY R	
			ART UNIT 2424	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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Office Action Summary	Application No. 10/542,135	Applicant(s) AERTS, STEVEN G E	
	Examiner Timothy R. Newlin	Art Unit 2424	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 3/22/2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 21-24 is/are allowed.
- 6) ☒ Claim(s) 1-18 and 20 is/are rejected.
- 7) ☒ Claim(s) 19 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

Applicant maintains the arguments that were presented in the last response. These arguments remain unpersuasive, for the reasons given in the Advisory Action mailed 2/19/2010:

The primary reason that Green inserts blank P-frames is to achieve varying playback speeds, while the conservation of memory resources is a secondary benefit. Green provides that any combination of I-frames and P-frames can be used depending on the desired playback speed. For example, to achieve a factor of four, 3 frames are inserted between I-frames instead of the original 15 frames. Paras. 65-68. Following this principle, in order to achieve a 15-times playback rate, Green would simply insert no blank frames. Thus, playing back only I-frames only, as in the combination of Green and Boyce, is in fact a specific case of Green's general principle, not contrary to it.

The Examiner has not overlooked the differences between the claimed invention and Green. To the contrary, the differences are acknowledged and deemed patentably insignificant in view of other prior art, namely Boyce as described in the rejection. Applicant alleges that Green is deficient because it does not cache separated I-frames during a standard play mode, but rather does so only in response to a trick play mode. Even assuming that were true, the claim does not require that the caching be done prior to a trick play command. Moreover, Examiner maintains that "standard play mode" can mean "other than a specialized mode." Such an interpretation is borne not of desire or convenience, but a responsibility to give the claims their broadest reasonable interpretation.

Regarding claims 2 and 12, Applicant argues that the modification would render Green inoperable. Examiner disagrees. Green provides for caching of I-

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frames (along with other frames) during playback, and one skilled in the art could use a similar buffer to store I-frames only as taught by Boyce. Green provides for fast-forwarding and rewinding which would suggest that I-frame from before and after playback position must be indexed. Thus motivated by Boyce to cache (instead of index) the separated I-frames, one of ordinary skill would include I-frames from both before and after to facilitate rewind and fast-forward, respectively.

Allowable Subject Matter

Claims 21-24 are allowed. Claim 19 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-6, 9-16, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Green et al., US 2002/0168175 in view of Boyce et al., US 5,717,816.

Regarding claims 1 and 11, Green discloses method of caching a part of digital content data from a content source, comprising the steps of:

acquiring the digital content data from the content source, the digital content including I-frames and non-I-frames, said part of the digital content data including interleaved segments of the acquired digital content data **[blocks 550, 551, Fig. 5;**

MPEG stream may be acquired from signal source 220, paras. 43, 61];

separating the I-frames from the non-I-frames to generate a block of multiple I-frames that includes temporally disparate I-frames **[I-frame identification module 561 uses the index of I-frames 552 to generate a block of selected I-frames 572, Fig. 5, paras. 61, 75, 77, 79; also see block 372, Fig. 3];**

caching a block of separated I-frames **[selected I-frames 572 (i.e. a block comprising I₁ and I₂) are buffered, Fig. 5, paras. 75, 83; also see block 372, Fig. 3];**

flushing ones of the separated I-frames as a function of a current playback location **[I frames are flushed or “released” as necessary to construct MPEG stream 583, which is displayed according to a playback command, paras. 79-83; playback module constructs the MPEG stream to generate a specific requested playback rate, para. 59; also see para. 109, describing discarding frames as a function of playback];**

caching a portion of the digital content data that includes both the I-frames and the non-I-frames **[MPEG signal received from signal source 220, including I-, P-, and B-frames, the signal is stored (i.e. cached) on media 550 before being output to the system bus 540, Figs. 5 and 2, paras. 75, 43, 55];**

accessing the cached digital content data, including both I-frames and non-I-frames, in response to a standard play mode **[regular playback, para. 66; content data is accessed for regular playback by MPEG decoder 525, Fig. 5, para. 74; decoder 272 decompresses MPEG data for display via video output 274, Fig. 2, para. 55]**; and

accessing the cached block of I-frames in response to a trick play mode **[I-frames are accessed and used to create MPEG stream for, e.g., a reverse mode, para. 79]**.

While Green does separate and cache I-frames as cited above, it is silent on whether the I-frames are cached by themselves, without P- or B-frames. Boyce does disclose separately buffering a block of I-frames without any non-I-frames **[after received I-frames are identified, selected, and compressed, they are separately stored in buffers, Fig. 1A, col. 10, 1-5]**. Boyce also explicitly uses the separated I-frames to facilitate trick play **[e.g., Abstract; col. 7, 22-25]**, recording them on a permanent video tape for later access. It would have been obvious to one of ordinary skill to modify Green by excluding P- and B-frames from the buffer in order to reduce memory requirements and yet retain the essential I-frames for a discernible trick play stream. And although Boyce uses the frames for recording rather than immediate display, Green itself suggests the compatibility of the references **[Fig. 2 shows video output 232 connected to both recording and display devices]**.

Regarding claims 2 and 12, Green describes the trick play method without specifically referencing a "current playback position." However, he does describe cached I-frames and describes an embodiment wherein they are used for both forward and reverse trick play. **Paras. 59, 64**. Official notice is taken that one skilled in the art would recognize the need for I-frames both before and after the current playback position in order to generate both forward and reverse trick play signals. It would have been obvious to have the block of frames meet this condition.

Regarding claims 3 and 13, Green's silence on a replay point means he also does not describe the relative time that storing of I-frames takes place. However, does state that the signal source could be a cable or satellite television signal **[para. 43]**, suggesting the possible display of live content, i.e. the frames are received and displayed at the same time in a standard play mode. In that case, the storing of incoming I-frames could not take place other than at or after replay, i.e. in a standard play mode as recited. Therefore, official notice is that one of ordinary skill in the television art knows that live content can be buffered only as it is received, and it would have been obvious to allow system of Green to do so.

Regarding claims 4 and 14, Green discloses a method wherein the number of I-frames in the cached block depends on parameters that include at least a probability of replay and/or an acquisition time **[the number of I-frames selected necessarily**

depends in part on acquisition time; the system can choose every I-frame, every other I-frame, etc., para. 69].

Regarding claims 5 and 15, Green discloses a method characterized in that the digital content data are video data in MPEG format and that the interleaved segments of the acquired digital content data are I-pictures **[e.g. para. 75].**

Regarding claims 6 and 16, Green discloses a method characterized in that each of the interleaved segments of the acquired digital content data is a continuously acquired part of the digital content data from the content source **[para. 74-79].**

Regarding claim 9, Green discloses a method wherein the content source is a storage medium **[para. 75].**

Regarding claims 10 and 20, Green discloses a method wherein the content source is a remote source and wherein the acquisition of the digital content data comprises receiving the digital content data over a network **[para. 44].**

Claims 7, 8, 17, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Green and Boyce as cited above in view of Logan, US 2004/0255330.

Regarding claims 7 and 17, Green does not teach the use of the buffers as an anti-shock mechanism, but it does disclose caching a contiguous first part of the digital content data, that includes both the I-frames and the non-I-frames, in a second memory **[paras. 75, 78]**. While Green is silent on anti-shock functionality, Logan teaches the accessing of the content buffer in response to an interruption from shock or vibration **[para. 54]**. It would have been obvious to one skilled in the art that the frame buffer exemplified in para. 78 of Green could support Logan's anti-skip function. The motivation from the point of view of Green would be to prevent skipping due to interruption of a remote signal **[paras. 43-44]** rather than shock, but the function is the same regardless of what causes the interruption.

Regarding claims 8 and 18, Green discloses a method wherein the steps of caching are implemented in a single memory circuit **[media 550, Fig. 5]**.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy R. Newlin whose telephone number is (571) 270-3015. The examiner can normally be reached on M-F, 8-5 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Kelley can be reached on (571) 272-7331. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Christopher Kelley/
Supervisory Patent Examiner, Art
Unit 2424

TRN